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CIRCULAR

EXPRESS COTTON



THE OPEN COTTON IS EXPRESS

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AGRICULTURAL COLLEGE, MISSISSIPPI

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EXPRESS COTTON

Introduction.—Express cotton is a new early variety of long staple Upland* cotton. It has been grown in Mississippi for four years now and the acreage has been increased each year as rapidly as seed have become available for planting. The very favorable results secured with Express cotton in the Delta seem to justify the Experiment Station in recommending this cotton as the best variety of its class. It is not an extra staple cotton but runs around an inch and three sixteenths, a popular length in the market at the present time. A great many inquiries are received in regard to the variety and this circular has been prepared to give certain information which may be of interest to growers of long staple cotton and to dealers handling this cotton.

Origin and History.—The question of where Express cotton came from is frequently asked and for this reason an account of its origin and history may be of some interest. This is one of the several new varieties which have been produced by the U. S. Department of Agriculture, and to Dr. D. N. Shoemaker, formerly of the Office of Cotton Breeding Investigations of the Bureau of Plant Industry of that Department, belongs the credit of establishing it.

Like all other varieties which have been developed, or rather isolated by systematic methods of selection and testing, within the past few years, this variety has descended from a single plant. The first selection was made by Dr. Shoemaker in 1904 in a mixed field of so-called "Bohemian" cotton growing near Paris, Texas. All of Dr. Shoemaker's work in subsequent years on the selection and testing of this variety was done near Paris.

The original strain at once showed remarkable earliness and later was named "Express" by Dr. Shoemaker because "it gets there early with the goods." This earliness was combined with considerable length of staple as compared with the cotton generally grown in that section, but it had defects which prevented it from getting into commercial cultivation in Texas. Almost throughout Texas, and especially on the black prairie lands, which make up the greater part of the cotton-producing area of Texas, a big balled, storm-proof, vigorous, drought-resistant type of cotton with a high lint percentage is preferred and these qualities are more or less lacking in Express. Besides, neither the greater length of lint nor the extreme earliness of Express cotton was an especially valuable quality in Texas. On the contrary, these qualities are very desirable in the Mississippi Delta and the defects which proved a handicap to this variety in Texas are not so objectionable in the Delta.

*The term *Upland cotton* is used here in its agricultural and botanical sense to distinguish it from Sea Island and Egyptian cotton, long staple cotton belonging to another species, rather than the ordinary trade sense. In the cotton trade the term *Upland cotton* usually refers to the short staple cotton grown on uplands, principally in the Southeastern States.

No further efforts were made by the Department of Agriculture to improve Express cotton after 1909 although it was tested in several localities in Texas in 1910 in comparison with other varieties and with unfavorable results. The variety appeared unpromising; it was not adapted to the conditions under which it had been grown and nearly all of the seed were discarded.

At that time the boll weevil had covered the region along the Mississippi River in the Southwestern part of Mississippi where the finest long staple cotton had been grown, and had invaded the Delta, a heavy producing region of benders and long staple cottons. As the old varieties depended on for these classes of cotton were late maturing, the boll weevil was causing them to be abandoned and early short staple varieties were being substituted. As a result the supply of long cotton was very much cut down and premiums on long staples became unusually high in 1910 and 1911.

While in the employ of the Federal Department of Agriculture in 1909, the writer had the opportunity of observing the behavior of Express cotton at Paris, and several other points in Texas in 1910. The earliness and the length of lint of this variety were recognized as being of probable value in the Delta, and on entering the service of the Mississippi Experiment Station in 1911 the writer secured about a peck of Express seed which had been saved at Washington from the crop of 1909. Most of these were planted at the Delta Branch Station in the spring of 1911, part in the variety test, and part in a small isolated seed patch. The showing made by this cotton at the Delta Station the first year was exceedingly good and all the pure seed produced were saved.

So far as the writer is aware, all of the Express cotton in the country (and several thousand acres were grown during the past season) has come from the peck of seed planted by the Mississippi Experiment Station in 1911. If the variety had not been taken up and introduced by this Station, it would probably have become extinct. Efforts were made to obtain more seed from Texas as soon as the variety began to appear promising in Mississippi in 1911, but without success. Several bales of Express cotton had been grown at Paris in 1909, but the seed had all been discarded before the value of this variety for other sections was discovered.

Characteristics of the Variety.—Express cotton is quite distinct in its appearance and also rather distinct in its behavior. The plant grows larger than most varieties and is rather open and spreading in form. This is due to the fact that the stem and branches are somewhat long and slender with long internodes. This is a disadvantage when grown on excessively rich land where the plant becomes very heavily loaded with fruit. It is a rather vigorous growing variety, and for that reason does well even on soils in the Delta which are somewhat thin. The leaves are small to medium-sized, and owing to this and to the open form of the plant, the foliage produces relatively little shade. The bolls are of medium size and rather long though not so pointed as those

of most long staple varieties. The bolls generally mature well and open up well, but hold the cotton only fairly well. It is not a storm-proof variety. The plant is rather free from fungus diseases and seems to resist both the cotton-wilt disease, or blight, and the boll-rots relatively well.



FIELD OF EXPRESS COTTON

One of the most distinctive characteristics of Express cotton is its earliness. It is unquestionably the earliest available variety that can be classed as long staple. The Express plant grows rapidly and although it does not begin blooming quite as early as Trice, or as early as King and Simpkins and other varieties of that group, still the first flowers of Express cotton appear relatively early and the plant soon makes up for any slight delay in starting to fruit by its rapid and profuse blooming. A great many flowers are produced within a short time, for the plant seems to bloom all over from top to bottom after fruiting is started. The time required for the bolls to mature (that is, the length of the period between the opening of the bloom and the opening of the resulting boll) is about as short in Express as in any other variety, and this fact, together with the quality of rapid fruiting, enables the Express plant, about as well as any other variety, to set its fruit and "get by" before the boll weevils become so numerous late in the season.

The length of staple is about an inch and three-sixteenths. It is frequently classed as selected inch and an eighth, or as commercial three-sixteenths, in the Greenville market, to which more Express cotton has been sent than to any other, but the staple usually runs about an inch and three-sixteenths, and in other markets it has frequently been classed inch and a quarter. The character of Express cotton is very good. It is a strong bodied, tough, even fiber; all expert classers seem to agree on this.

Comparison with Other Varieties.—The staple of Express cotton is of a popular length, that has been in good demand and has brought a satisfactory premium over short staple, and this condition is likely to continue unless the production becomes excessive. Toward the close of 1911, a decided slump occurred in the demand and the premiums for long staple cotton, and this continued through last season. This,

however, affected mainly the extra staples (longer than inch and a quarter) while inch and three-sixteenths cotton has continued to sell well all along.

Last year selected inch and an eighth and inch and three-sixteenths cotton in strict middling grade sold at Greenville around 16 to 16 $\frac{3}{4}$ cts., while shorts in the same grade were selling at 13 to 13 $\frac{3}{4}$ cents. This year, of course, values are abnormally low on all classes of cotton on account of the effects of the European War, but the scale of prices for different staples remains favorable to Express. The premium for inch and three-sixteenths cotton has ruled from about 3 to 6 cents per pound above the value of shorts of the same grade except in extremely low grades. As the whole cotton industry is very much demoralized now, probably no one can predict the probable differences in prices that will be paid next season for long and short staple cotton. However, under favorable conditions Express usually yields as well, or nearly as well, as the earliest and most productive short staple varieties and usually yields more than other long staple varieties, and in sections suitable to the production of long staple cotton, Express is undoubtedly one of the most profitable varieties to plant with the present range of prices in force. Experiments conducted under boll weevil conditions in the Delta indicate that this is especially true if cotton can be grown successfully at all. Where the boll weevil is not a factor in long staple territory, other varieties may be more profitable, but what remains uninfested of the Delta in Mississippi and Arkansas is so far north that, even without weevils, the distinct earliness of Express should give it an advantage, especially in a short season.

Express was first grown in the variety test at the Delta Station in 1911 and most of the conclusions regarding the merits of this variety have come from that and subsequent tests at the Delta Station supplemented by variety tests made elsewhere in the Delta and by the opinions of planters who have grown the variety commercially*. In 1911 cotton at the Delta Station came up rather late and was damaged considerably by the boll weevil. In this test Express led all other varieties in yield of seed cotton and in money value of the product per acre, based on the yield of seed and lint and the value per pound of these products.

In 1912 Express was not grown in the variety tests, all seed having been planted in a field separated from other cotton in order to increase the amount of pure seed. In 1913 this variety stood third in point of money value per acre in the list of forty-five varieties tested at the Delta Station, being slightly exceeded only by two short staple varieties. The boll weevil did practically no damage to this cotton. In 1914 Express led all the other sixteen varieties tested at the Delta Station in money value per acre of the product. Variety tests were conducted

*The results of most of the variety tests referred to have been published in Bulletins Nos. 155, 161, 164, and 169 of the Mississippi Experiment Station and the exact figures can be found in these publications.

by the Experiment Station on plantations heavily infested with boll weevils at other points in the Delta in 1913 and in 1914, and the results of these tests bore out those secured at the Delta Station so far as Express was concerned.

In variety tests conducted at the other stations Express has made a fairly respectable showing with and without the boll weevil, but the returns have not been so favorable as in the Delta. It should be remembered that this cotton is not being recommended for general cultivation everywhere. It is recommended especially for the Delta and, perhaps, for certain strong soils elsewhere which will produce long staple cotton to advantage. It is believed that this variety will do very well in the Northeast Prairie region of Mississippi.

Objectionable Features.—As stated already, this cotton is not suitable for planting on very excessively rich land. The stem and branches are somewhat slender and when very heavily loaded with fruit they are apt to be broken down by the weight of the bolls. While this cotton does especially well in the Delta as a whole, there are certain new lands there and lands that have been heavily manured, which, if put in cotton, had better be planted with some other early variety, such as Trice, Simpkins, or Dodds' Prolific, varieties which do not produce such a large stalk. However, the area over which this objection to Express will apply is not very great. Although most Delta soils have been very fertile and are still potentially so and capable of being brought back to that condition, still those that have been cultivated in cotton long have usually been "worn out," and on most of the lands of this section, there will be no danger in planting Express cotton on account of the defect mentioned above. On the other hand, very thin, drouthy soils that are subject to rust should be planted with some of the big balled, vigorous, longer growing varieties.

Another disappointing feature of Express is the low lint percentage, or ginning out-turn. In all of the ginning tests that we have made with Express cotton, the lint out-turn has run around 28 per cent of the seed cotton ginned. At this figure it takes about 1,785 pounds of seed cotton to make a 500 pound bale, net weight (excluding the weight of bagging and ties). This cotton has usually been stored for sometime before ginning and has been allowed to season, or dry out. In practice where the cotton is hauled directly to the gin as soon as picked, especially early in the season when the seed are green and sappy, it frequently takes from 1,800 to 2,000 pounds of seed cotton to make a 500 pound bale. Although this low lint percentage is really an objectionable quality and is rather disappointing to the man who only puts a light load of seed cotton on his wagon and carries it to the gin, still it is not a very serious objection if the yield of seed cotton per acre is great enough to compensate for the low percentage of lint, because at normal prices the seed will pay for picking the cotton. Nevertheless, it is believed that a high linting cotton has the advantage in several ways and efforts are being made to develop strains of Express, or something just as good, with a higher lint percentage.



Seed Supply.—As the Station began to grow Express cotton with only a very small supply of seed in 1911 and all the seed now available has come from our first planting, it has taken a good while to get the variety into general cultivation and the seed were in great demand last year. Several thousand acres were grown in the Delta during the past season and an ample supply of seed is now on sale by those who grew it.

The stock of seed of this variety now being grown commercially is not entirely pure and inferior plants bearing inferior lint can be found in any field. However, this cotton is not nearly so badly mixed as most of the cotton now generally grown in the Delta. The Experiment Station has in hand selected strains of Express that are more promising than the general unselected stock. These are not ready for distribution yet, but it is expected that some of them can be introduced in a relatively pure state in the near future.

It is hoped that those who are growing this variety, or any other good variety, will exercise every precaution to keep their seed as pure as possible. The greatest source of seed mixture is the public gin and the private gin is sometimes as bad where different varieties are ginned at the same ginnery. Unless all the cotton ginned at a plant is of the same variety, where seed are to be saved for planting, the gins and the elevators leading to the gins should be thoroughly cleaned of all cotton and seed and the seed to be saved should be caught on the floor at the gin head and not allowed to get into the seed elevator. The ginning of cotton from which the seed is to be saved should be arranged at a time when the gins are not rushed and time can be taken to take these precautions. Unless seed mixture is prevented, the variety will surely decline both in yield and in selling quality, and as a result of the deterioration in length of staple and character of lint due to mixture, any preference which may be established for this cotton in the market will soon disappear.